



Department of
Toxic Substances
Control

*Preventing
environmental
damage from
hazardous waste,
and restoring
contaminated
sites for all
Californians.*



State of California



California
Environmental
Protection Agency

Fact Sheet, October 2009

SHERWIN-WILLIAMS SITE DRAFT REMEDIAL ACTION PLAN AVAILABLE FOR PUBLIC REVIEW

The Department of Toxic Substances Control (DTSC) invites you to comment on the draft Remedial Action Plan (RAP) for the Sherwin-Williams Company property located at 1450 Sherwin Avenue in Emeryville, California and a portion of the adjacent former Rifkin property, located at 4525 – 4563 Horton Street (collectively called the Sherwin-Williams Site, please see Figure 1 on Page 9). The draft RAP proposes soil and groundwater cleanup actions for the Sherwin-Williams Site.

This fact sheet provides information concerning the public comment period, Site background, the draft RAP, the proposed California Environmental Quality Act (CEQA) draft Mitigated Negative Declaration, information repositories, information contacts and mailing list information.

A RAP is a document that identifies goals and objectives for a cleanup action, summarizes the assessment of cleanup alternatives to address the contamination found at a site, and presents the implementation activities for the selected final cleanup. DTSC is responsible for overseeing the investigation and cleanup activities at the Sherwin-Williams Site.

Public Comment Period

We encourage you to review and comment on the draft RAP and the draft CEQA Mitigated Negative Declaration for the Sherwin-Williams Site. These documents are available for review as listed on Page 8. DTSC begins a 30-day public comment period on October 28, 2009 that ends on December 1, 2009. All written comments must be postmarked by or sent by December 1, 2009 to the following:

Ms. Janet Naito, DTSC Project Manager
700 Heinz Avenue, Suite 200
Berkeley, California 94710
Or via e-mail to JNaito@dtsc.ca.gov

Public Meeting

Thursday, November 5, 2009, 7:00 p.m. to 9:00 p.m.

DTSC will hold a public meeting regarding the draft RAP and the draft CEQA Mitigated Negative Declaration on **Thursday, November 5, 2009 at the City Council Chambers at City Hall, 1333 Park Avenue, Emeryville, California from 7:00 p.m. to 9:00 p.m.** DTSC will respond to written and oral comments submitted at the public meeting as well as written comments received by mail or e-mail by December 1, 2009. For more information about the accessibility of the public meeting site or community involvement, please call Mr. Nathan Schumacher, DTSC Public Participation Specialist at toll free (866) 495-5651 or e-mail him at NSchumac@dtsc.ca.gov.



Site Background

The Sherwin-Williams Company operated a manufacturing plant that produced a wide variety of paints and coatings between 1919 and 2006. Pesticides containing lead and arsenic were also manufactured at the plant from the 1920s until the late 1940s. Sherwin-Williams closed its operations at the Site in December 2006. These former operations caused soil and groundwater contamination.

Arsenic is the main chemical of concern in soil and groundwater. Volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and other metals have also been found in the soil. VOCs, other metals, and naphthalene have been found in the groundwater. There is no immediate health risk because the Sherwin-Williams Site is paved and the groundwater is not used for drinking water.

Site Regulatory History

Prior to February 2006, the San Francisco Bay Regional Water Quality Control Board (Water Board) provided oversight for the cleanup activities at the Sherwin-Williams Site. During its oversight, the Water Board approved several Site documents, including a 2004 Remedial Investigation Report and a 2005 Human Health Risk Assessment.

In February 2006, regulatory oversight was transferred to DTSC to evaluate the cleanup alternatives and to implement the final cleanup action. On May 10, 2006, DTSC issued an Order to Sherwin-Williams defining the cleanup process for the Site. These documents can be found in the information repositories and on DTSC's EnviroStor Database listed on Page 8 of this fact sheet.

Site Characterization

Arsenic is the primary chemical of concern on-site in both soil and groundwater. The highest concentration of arsenic in soil is in the east-central portion of the Sherwin-Williams property and in the adjacent portion of the former Rifkin property. These areas are covered with pavement.

Arsenic is detected in shallow groundwater (between 10 and 25 feet below the ground surface) below an area referred as the Raised Cap and also on the adjacent portions of the former Rifkin property extending west toward the Union Pacific Railroad tracks (see Figure 1 on Page 9).

After becoming the lead agency, DTSC required additional investigations and studies to assist in the evaluation of cleanup alternatives. Additional soil and groundwater samples were collected for a series of tests. A team of professional and academic experts helped to identify and evaluate potential cleanup options for the Site.

Conceptual Site Model

Based upon the results of the Site characterization, a conceptual site model was developed. This model describes how chemicals may have been released into the environment, how these chemicals moved in the environment, and how people and the environment could be exposed to these chemicals.

Sherwin-Williams produced lead arsenate pesticides for about 25 years at the Site. During this time, spills of acids, raw materials, liquids, and/or the finished product occurred onto the building floor and ground surface. Some of these materials contained arsenic. Over time, the spilled material moved into the subsurface. Acids that moved into the subsurface dissolved the natural minerals in the soil and released silica (the most common element in earth's crust), which then dissolved in groundwater.

As arsenic-containing spills moved through the subsurface soil and into shallow groundwater, the arsenic reacted with the dissolved silica and formed a mineral coating around soil particles. This is called solid phase arsenic silica or the source material (see Figure 2 on Page 10). The source material is found in the sandy (east-central) portion of the Site also referred to as the source area.

Groundwater flowing through sandy soils in the source area dissolves some of the coating and releases arsenic into the groundwater. This is an on-going, slow process and represents a continuous source of arsenic to groundwater.

The dissolved arsenic primarily moves within sandier soils in the direction of groundwater flow, west/northwest toward the railroad tracks. Arsenic concentrations in groundwater decrease rapidly as groundwater moves away from the source area and toward the western property boundary. Some of the dissolved arsenic moves into the clay surrounding the sandier soils. In these clays, the arsenic reacts with sulfides (naturally occurring within the groundwater) to form an arsenic sulfide precipitate, a mineral that does not readily dissolve in groundwater. This process contributes to the decrease in arsenic concentrations in groundwater away from the source area.

Interim Cleanup Actions

Several cleanup actions have already been implemented at the Site. Interim cleanup actions are actions taken to protect public health and the environment while long-term solutions are being developed.

Between 1973 and 1994, Sherwin-Williams removed the manufacturing plant that produced lacquer. Solvent and oil tanks were also removed during this time. Soil in the area of the solvent tanks containing VOCs, such as toluene, was removed and disposed off-site prior to 1990.

In the early 1990s, the Water Board approved the implementation of several interim cleanup actions that included the installation of:

- A slurry wall, a subsurface vertical wall primarily composed of clay, to contain the more highly contaminated groundwater at the Sherwin-Williams Site.
- An asphalt cap over the surface of the Site to prevent contact with contaminated soil.
- A groundwater extraction and treatment system inside the slurry wall to help contain groundwater within the slurry wall.

In 1997, the Water Board oversaw the removal of arsenic impacted soil along the portion of Horton Street adjacent to the Sherwin-Williams Site (see Figure 1 on Page 9). In 1999 and 2000, the groundwater extraction and treatment system was

expanded to add additional groundwater extraction wells.

DTSC is currently overseeing the operation and maintenance of the capped area, the storm water collection system, and the groundwater extraction and treatment system.

Cleanup Action Objectives

Based upon data gathered during the Remedial Investigation, a Human Health Risk Assessment was performed to look at the various ways people could be exposed to chemicals present in soil and groundwater. This assessment determined that cleanup actions are necessary to address the future risks posed by arsenic and other chemicals of concern in soil and groundwater.

The cleanup action objectives are to:

- Minimize the potential for people to come into direct contact with soil containing chemicals of concern at concentrations exceeding their cleanup goals.
- Minimize the potential for the generation of airborne dust from soil containing chemicals of concern at concentrations exceeding Site cleanup goals.
- Minimize the potential for people to be exposed to volatile organic chemicals of concern in indoor air exceeding Site cleanup goals;
- Minimize the risk to fish or other water organisms from groundwater containing chemicals of concern at concentrations exceeding Site cleanup goals; and
- Minimize the potential for on-site human contact with groundwater containing chemicals of potential concern at concentrations exceeding Site cleanup goals.

Cleanup goals are based upon concentrations calculated as part of the risk assessment to protect public health and the environment. Cleanup goals for chemicals in groundwater were set at the more protective of the federal or state drinking water standards. For those chemicals

without drinking water standards, DTSC used the Water Board's Environmental Screening Level.

Treatability Study Tests

Under DTSC oversight, Sherwin-Williams evaluated numerous technologies to identify those that could potentially address chemicals of concern at the Site. Sherwin-Williams then conducted tests to determine whether these cleanup technologies could effectively clean up the arsenic and other chemicals found in soil and groundwater at the Site. Based upon concerns about potential disruptions to the community, Sherwin-Williams focused on technologies that would treat the arsenic in place, and minimize the amounts of soil excavated from the Sherwin-Williams Site.

The following cleanup technologies were studied:

In-Place Groundwater Treatment: Groundwater treatment such as adding iron to bind the arsenic that would be done in-place within the shallow groundwater. This technology would require the addition of too much material to be effective at addressing the arsenic in the source area, but could treat groundwater containing less arsenic away from the source area.

Active Groundwater Treatment: Groundwater would be cleaned in a treatment system (one or more containers) installed above or below ground level. Materials such as iron and oxygen would be used to cause the arsenic in the shallow groundwater to become insoluble. Treatability tests were conducted to determine the best materials to use.

On-site Soil Treatment: Soil treatment technologies that would be done in-place.

- **Grout Injection.** Injection of a cement-like material into the shallow groundwater so that groundwater could not move easily through the source area. The pilot test was not successful at distributing the grout material evenly through the soil in the shallow groundwater.

- **Soil Mixing.** Using a drilling rig to mix the cement-like material with soil within the shallow groundwater. Laboratory tests indicated that this could significantly slow down the movement of groundwater through the source area and thus keep the arsenic from moving further. However, the addition of the cement-like material could also cause some arsenic currently binding to soil to be released into the groundwater.

Cleanup Options for the Site

Sherwin-Williams evaluated the following general cleanup options for soil and groundwater:

- No Action
- Land Use Controls
- Excavation (Soils) and Extraction (Groundwater)
- Disposal to an approved off-site disposal facility
- Treatment of soil and/or groundwater

These options are further discussed below.

No Action: This option includes discontinuing operation of the existing interim cleanup actions as discussed on Page 3.

No Additional Action: This option includes continuing to operate the existing interim cleanup actions described on Page 3.

Land Use Controls: These are restrictions on the future use of the property to ensure that people and the environment are not exposed to the chemicals in soil or groundwater at unsafe levels.

Typical restrictions include 1) prohibiting excavation or drilling into soil or the groundwater containing arsenic and other chemicals without prior DTSC approval and risk management planning; and 2) prohibiting the use of the groundwater from the Sherwin-Williams Site.

Excavation (Soils): The following are potential options for soil excavation. Excavated soil would be disposed of at an appropriate off-site disposal facility.

- Removal of approximately 33,500 cubic yards of soil, including approximately 7,000 cubic yards of soil and debris from the Raised Cap area and approximately 26,500 cubic yards of soil above the groundwater either containing arsenic above the Site cleanup goal of 24 parts per million (ppm) or overlying the source area.
- Removal of approximately 59,000 cubic yards of soil, including removal of the soil discussed in the previous bullet and approximately 25,300 cubic yards of soil from the source area on the Sherwin-Williams property.
- Removal of approximately 64,000 cubic yards of soil, including removal of soil discussed in the previous bullet and approximately 4,600 cubic yards of soil within the source area on the former Rifkin property.
- Removal of approximately 194,000 cubic yard of contaminated soil to remove all soil exceeding both of the soil cleanup goals. This would include the removal of soil above the shallow groundwater containing arsenic above the Site cleanup goal and soil within the shallow groundwater in areas where arsenic levels in groundwater exceed levels protective of aquatic resources.

Extraction (Groundwater): Groundwater containing chemicals of concern would be pumped out of the ground and cleaned up in a treatment system. The treated water would be disposed of to the sanitary sewer or storm drain under appropriate permits.

Treatment (Soil): Soil within the shallow groundwater in the central portion of the Sherwin-Williams Site would be mixed with cement-like material so that groundwater cannot move easily through this material. This would reduce the levels of arsenic in the shallow groundwater flowing away from the source area.

Treatment (Groundwater): Groundwater would be cleaned up by using oxygen and iron to cause the arsenic to become insoluble and able to be removed from the groundwater.

Assessment of Alternatives

The above cleanup options were combined into different cleanup alternatives in the Feasibility Study (FS) report for further assessment. DTSC and Sherwin-Williams evaluated the cleanup alternatives based upon their ability to meet the following federal criteria:

- Overall Protection of Human Health and the Environment
- Compliance with Applicable or Relevant and Appropriate Requirements
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility and Volume through Treatment
- Short-Term Effectiveness
- Implementability
- Cost
- Regulatory Acceptance
- Community Acceptance

Draft RAP Recommended Alternative

Based upon the technologies tested and the alternatives evaluated, DTSC recommends the removal of approximately 64,000 cubic yards of contaminated soil including the Raised Cap Area, the soil overlying the source area and the soil within the shallow groundwater source area. These actions provide the best overall protection of human health and the environment. The soil removed would be transported to an appropriate permitted off-site disposal facility. Removing this soil also provides long-term cleanup effectiveness and permanence. Long-term groundwater monitoring will be conducted to evaluate the effectiveness of the soil removal.

California Environmental Quality Act

As required by the California Environmental Quality Act (CEQA), an Initial Study was prepared to evaluate potential environmental impacts that may result from the implementation of the draft RAP. DTSC has determined that because the focus of the draft RAP is to clean up impacted soil and groundwater and the draft RAP has controls to protect the community and environment during cleanup, there will be no

significant negative impacts. DTSC has proposed a CEQA Mitigated Negative Declaration for the draft RAP. Items requiring mitigation during cleanup are offsite aesthetics at the intersection of Park Avenue and Halleck Street and documentation for potential archeological findings.

Cleanup Plan and Implementation

Details of the recommended final cleanup are provided in the draft RAP. This plan describes the proposed cleanup measures, transportation routes and the proposed actions to ensure the safety and protection of the surrounding community while the cleanup is implemented. Figure 3 on Page 11 presents a preliminary layout of the Sherwin-Williams Site during cleanup implementation.

If approved, the cleanup activities would include excavation and off-site transport of about 64,000 cubic yards of soil over a 6-month period beginning in spring 2010. Based on the results of the Public Health Evaluation of the Remedial Alternative (Public Health Evaluation), DTSC will require the use of a variety of control measures to reduce dust and vapors during the cleanup.

The Public Health Evaluation analyzed the potential risks from the cleanup activities. Based on the use of appropriate emission control technologies, e.g., dust and vapor controls, the Public Health Evaluation concluded that people in the community will not be put at risk from cleanup implementation.

Prior to the start of the cleanup, a Community Safety Plan will be distributed to the community. The plan will provide information for the community regarding the measures to control exposures to chemicals that could be present during the implementation. The substance of the Community Safety Plan will be presented to the community during a meeting prior to cleanup.

The Public Health Evaluation calculated dust and vapor action levels that should not be exceeded at the perimeter during cleanup, thus ensuring protection of the community from any adverse health effects. The Public Health

Evaluation calculates these action levels using state and federal guidance and standards. Perimeter air monitoring will be used to confirm the effectiveness of vapor and odor control methods (see Figure 3 on Page 11 for preliminary monitoring locations). Control methods will be modified as appropriate to maintain levels below action levels. Results from the perimeter air monitoring will be sent to DTSC on a constant basis.

As part of vapor controls, prior to excavation, soil vapor extraction wells will be used to remove stagnant VOCs present in the subsurface. The soil vapor extraction and treatment system will be operated pursuant to a BAAQMD permit. The system will be phased out as excavation proceeds.

As excavation proceeds, a shoring system and a dewatering system will be installed. For excavation along Horton Street, the shoring system will consist of a retaining wall utilizing an anticipated nine piles drilled into place with boards/plates in between the piles. The piles will be drilled to a depth of approximately 50 feet. The wall will be approximately 60 feet in length. Perimeter noise monitoring will be conducted to ensure compliance with local noise ordinance throughout the cleanup activity. The remaining portions of the excavation will be shored through sloping.

The excavation depth will be approximately 25 feet. The shallow groundwater extends from approximately 7 to 25 feet below ground surface. The excavation will be dewatered using one or more sump pumps installed at the bottom of the excavation on the S-W property. Water collected will be pumped to the existing groundwater treatment system prior to discharge to Temescal Creek or to the local wastewater treatment plant under permit, or transported off-site for treatment and disposal/reuse.

During excavation, the soils will be monitored for cultural resources and as appropriate the work will be modified to preserve any discovered resources.

The excavated soil/material will be stockpiled on-site for characterization, and then loaded onto trucks and/or railcars for transport to off-site disposal. If all materials removed from the Site were to be trucked, the duration for truck loading and off-site transport is estimated at 9 to 18 weeks. This duration is based on 50 to 100 truck trips per day.

Trucks will approach the Sherwin-Williams Site northbound from Mandela Parkway through Halleck Street to Sherwin Avenue, and then enter into the property. Trucks will leave through the same route. A decontamination station will be set up on-site to dry brush and/or wet rinse trucks when leaving. All soil/material will be covered during on-site storage or transport.

After completion of the excavation and backfill activities, a long-term groundwater monitoring program will be implemented to evaluate the effectiveness of the cleanup. The program will involve the proper abandonment of over 50 wells and installation of 15 wells. The program will involve periodic gauging of groundwater water level and collection of groundwater samples for analysis from approximately 40 wells.

Information Repositories

Documents for the Sherwin-Williams Site can be viewed at the following Information Repositories:

Oakland Public Library
5606 San Pablo Avenue
Oakland, CA 94608
(510) 622-2493

45th Street Artists' Cooperative (Co-op Residents Only)
1420 45th Street
Emeryville, CA 94608

Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710
File Room: Monday-Friday: 8:00 a.m. to 5:00 p.m.; please call (510) 540-3800 to make the necessary arrangements.

You can also view Site documents on our website at www.dtsc.ca.gov. "Click" on Find A Site Near You, at the top of the page, then type in "Emeryville" next to the yellow box labeled City, then go to the bottom of the page and "click" on Get Report. You will find Sherwin-Williams listed in alphabetical order. "Click" on Report next to the site name.

DTSC Contact Information

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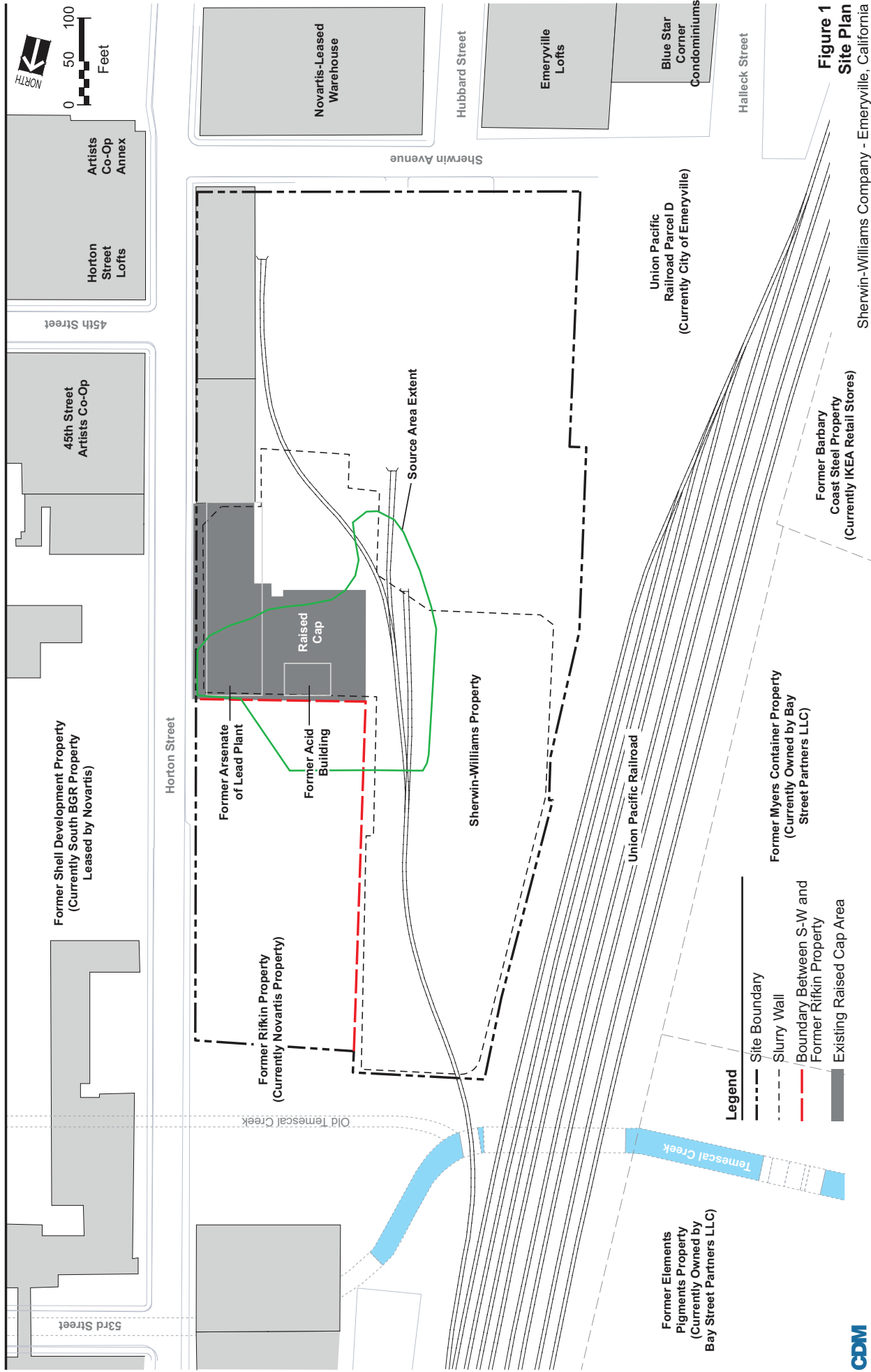
Nathan Schumacher
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8800 Cal Center Drive
Sacramento CA 95826
Toll free (866) 495-5651, press prompt # 1, then press prompt # 5 or (916) 255-3650
NSchumac@dtsc.ca.gov

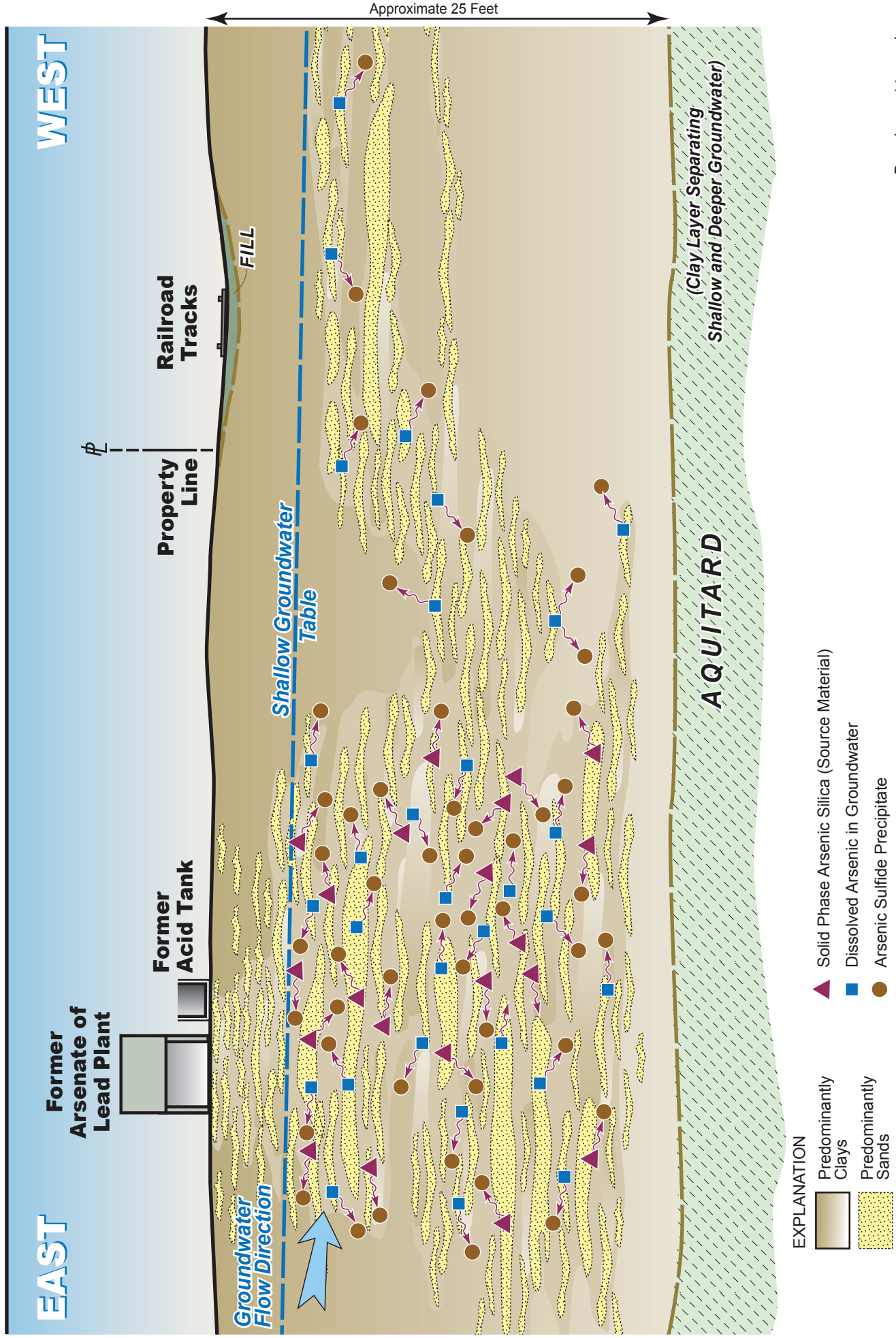
If you are a member of the Media, please contact Carol Northrup, Public Information Officer, (510) 407-4817 or
CNorthru@dtsc.ca.gov.

Nathan Schumacher
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Sacramento CA 95826

Notice to Hearing Impaired Individuals

TDD users can use the California Relay Service at 1-888-877-5378. Please ask them to send your message to Nathan Schumacher at (916) 255-3650 about the Sherwin-Williams project.





Drawing not to scale

Figure 2

Conceptual Site Model

Sherwin-Williams Company - Emeryville, California

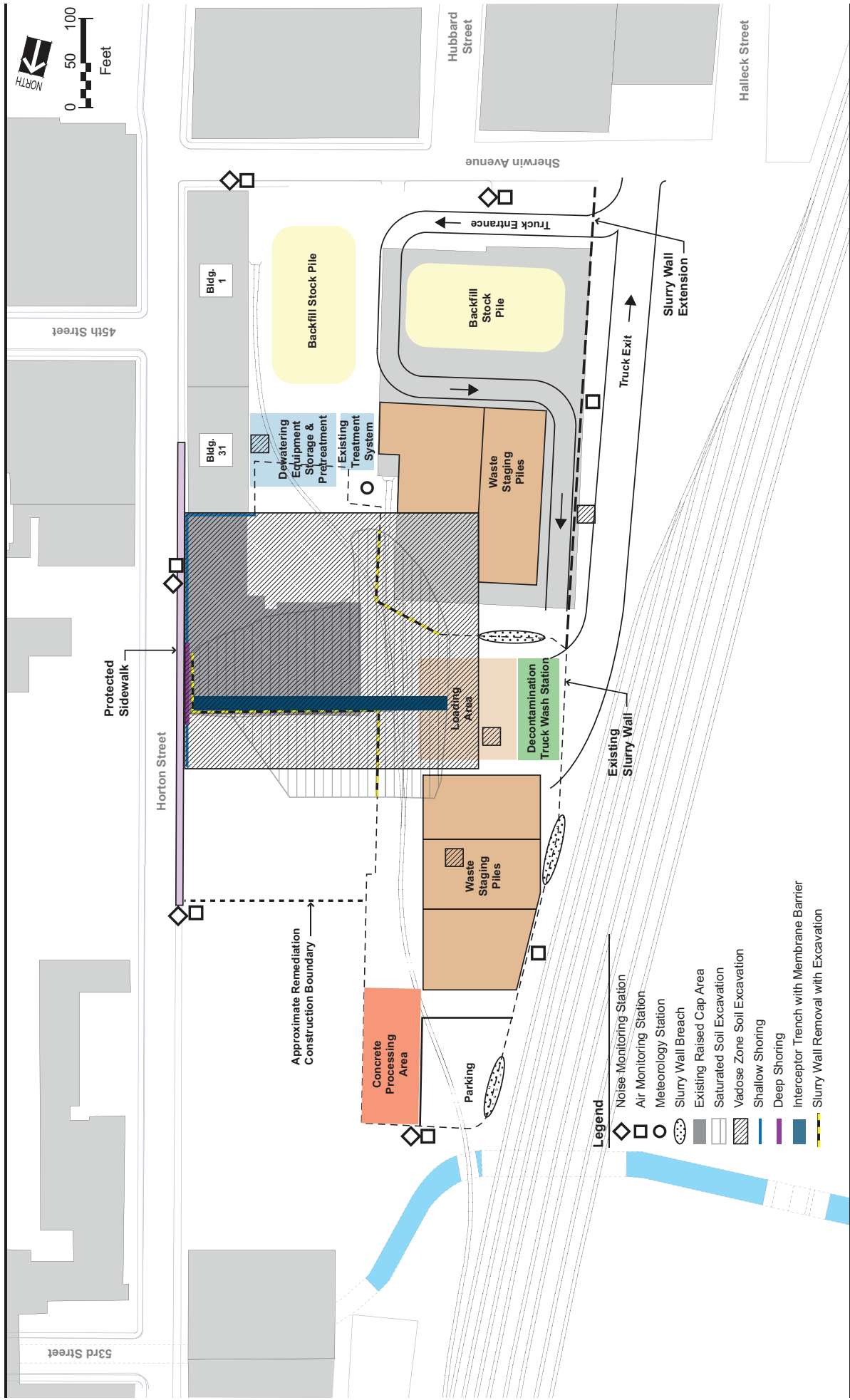


Figure 3
Site Layout and Controls
Shewin-Williams Company - Emeryville, California

Nathan Schumacher
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**Sherwin-Williams Site
Public Meeting
November 5, 2009**